AMENDMENT

Listing of Claims

Please amend the claims as follows:

1. (Previously Presented) A converter device, comprising:

a board having a first side and a second side in a parallel relationship, the first and second sides being separated from each other by a thickness of the board, the board further having third through sixth sides that are parallel to the thickness of the board, the third and fifth sides being parallel to each other, the fourth and sixth sides being parallel to each other, and the third and fourth sides being orthogonal to each other, wherein

the first side includes a first set of contacts suitable for electrically contacting an integrated circuit having a first configuration; and

the second side includes a second set of contacts suitable for electrically contacting a circuit board having a second configuration, wherein the second set of contacts are communicatively coupled to the first set of contacts;

the board being defined by a z axis, a y axis, and an x axis, in which the x, y, and z axes are mutually orthogonal, the z axis being orthogonal to the first and second sides and corresponding to the thickness of the board, the x axis being parallel to the third and fifth sides, the y axis being parallel to the fourth and sixth sides, wherein at least one of the first set of contacts is electrically connected to a corresponding one of the second set of contacts such that these two contacts have a non-zero x offset, a non-zero y offset, and a non-zero z offset with respect to each other,

wherein contacts having a function configured in the first configuration are not arranged with contacts having a corresponding function configured in the second configuration, and wherein the set of contacts of the first configuration and the second configuration have a substantially similar size.

2. (Original) The converter device as described in claim 1, wherein a device having the first configuration is unsuitable for direct contact and operation with a device having the second configuration.

3. (Previously Presented) The converter device as described in claim 1, further comprising an integrated circuit having a set of contacts arranged in the first configuration and a circuit board having a set of contacts arranged in the second configuration.

4. (Original) The converter device as described in claim 3, wherein the integrated circuit set of contacts includes at least one contact having a function corresponding to a function of a contact of the circuit board, the integrated circuit contact positioned so that when the integrated circuit is arranged with the circuit board, the integrated circuit contact is not positioned for electrical coupling to the contact of the circuit board having a corresponding function.

5. (Previously Presented) The converter device as described in claim 1, wherein the board includes a ground layer and a power layer.

6. (Original) The converter device as described in claim 1, wherein the first set of contacts is electrically connected over an electrical connection to the second set of contacts.

7. (Currently Amended) An apparatus, comprising:

an integrated circuit including a set of contacts, wherein the integrated circuit set of contacts is suitable for operation in a first configuration, the first configuration having an arrangement of contacts and corresponding functions of arranged integrated circuit contacts;

a circuit board including a set of contacts, wherein the circuit board set of contacts is suitable for operation in a second configuration, the second configuration having an arrangement of contacts and corresponding functions of arranged circuit board contacts, wherein the contacts of the second configuration are situated to correspond to the contacts of the first configuration of the integrated circuit, and arrangement of functions of the contacts of the second configuration does not correspond to arrangement of functions of the contacts of the first configuration; and

a converter device disposed between the integrated circuit and the circuit board,

wherein the converter device includes a first set of contacts suitable for contacting the integrated circuit having the first configuration, and a second set of contacts suitable for contacting the circuit board having the second configuration, wherein the first set of contacts is communicatively coupled to the second set of contacts and wherein contacts having a function configured in the first configuration are not arranged with contacts having a corresponding function configured in the second configuration,

wherein an electrical connection within the converter device extends ~~two dimensionally within a major plane of extension~~ along the x and y axes of the converter device, ~~the major plane of extension of the converter device being substantially parallel to major planes of extension of the circuit device and the integrated circuit,~~ the electrical connection electrically connecting at least one of the first set of contacts with at least one of the second set of contacts.

8. (Original) The apparatus as described in claim 7, wherein contacts of the integrated circuit having a function configured in the first configuration are not arranged with contacts of the circuit board having a corresponding function configured in the second configuration.

9. (Original) The apparatus as described in claim 7, wherein a device having the first configuration is unsuitable for direct contact and operation with a device having the second configuration.

10. (Original) The apparatus as described in claim 7, wherein the first set of contacts is disposed to the second set of contacts as at least one of opposing sides of the converter device and sharing a side of the converter device.

11. (Original) The apparatus as described in claim 7, wherein the integrated circuit set of contacts includes at least one contact having a function corresponding to a function of a contact of the circuit board, the integrated circuit contact positioned so that when the integrated circuit is arranged with the circuit board, the integrated circuit contact is not positioned for electrical coupling to the contact of the circuit board having a corresponding function.

12. (Currently Amended) The apparatus as described in claim 7, wherein the converter device includes a first converter board, ~~and~~ a second converter board, a third set of contacts, and a fourth set of contacts, the third and fourth sets of contacts being arranged on opposing sides of the second converter board, wherein the first converter board includes first and second sets of contacts and the second converter board includes third and fourth sets of contacts, the first and second sets of contacts being communicatively coupled through the first converter board, the second set of contacts positioned for contacting the third set of contacts, the third set of contacts being communicatively coupled to the fourth set of contacts through the second converter board.

13. (Currently Amended) The apparatus as described in claim 12, further comprising a third converter board, ~~a third set of contacts, and a fourth set of contacts, the third and fourth sets of contacts being arranged on opposing sides of the third converter board, wherein the first converter board includes the first set of contacts and the second converter board includes the second set of contacts, the first set of contacts being communicatively coupled to the second set of contacts through the first converter board, the third set of contacts, the third converter board, the fourth set of contacts, and the second converter board.~~ a fifth set of contacts, and a sixth set of contacts, the fifth and sixth sets of contacts being arranged on opposing sides of the third converter board, wherein the first converter board includes first and second sets of contacts, the second converter board includes third and fourth sets of contacts, and the third converter board includes fifth and sixth sets of contacts, the first and second sets of contacts being communicatively coupled through the first converter board, the second set of contacts positioned for contacting the third set of contacts, the third set of contacts being communicatively coupled to the fourth set of contacts through the second converter board, the fourth set of contacts positioned for contacting the fifth set of contacts, the fifth set of contacts being communicatively coupled to the sixth set of contacts through the third converter board.

14. (Currently Amended) An apparatus, comprising:

an integrated circuit including a set of contacts, wherein the integrated circuit set of contacts is suitable for operation in a first configuration, the first configuration

having an arrangement of contacts and corresponding functions of arranged integrated circuit contacts;

a circuit board including a set of contacts, wherein the circuit board set of contacts is suitable for operation in a second configuration, the second configuration having an arrangement of contacts and corresponding functions of arranged circuit board contacts, wherein the contacts of the second configuration are situated to correspond to the ~~contact~~ contacts of the first configuration of the integrated circuit, and arrangement of functions of the contacts of the second configuration does not correspond to arrangement of functions of the contacts of the first configuration; and

a converter device disposed between the integrated circuit and the circuit board, wherein the converter device includes a first set of contacts suitable for contacting the integrated circuit having the first configuration and a second set of contacts suitable for contacting the circuit board having the second configuration, the first set of contacts electrically coupled to the second set of contacts via electrical connections, wherein the electrical connections extend within the converter device along the x and y axes ~~two-dimensionally in a major plane of extension~~ of the converter device and also extend ~~two-dimensionally in a minor plane of extension perpendicular to the major plane of extension~~ within the converter device along the z axis of the converter device, wherein contacts having a function configured in the first configuration are not arranged with contacts having a corresponding function configured in the second configuration.

15. (Original) The apparatus as described in claim 14, wherein an integrated circuit configured for contacting the first set of contacts of the converter device includes at least one contact positioned so as to be unsuitable for operation with the circuit board.

16. (Original) The apparatus as described in claim 14, wherein a device having the first configuration is unsuitable for direct contact and operation with a device having the second configuration.

17. (Original) The apparatus as described in claim 14, wherein the first set of contacts is disposed to the second set of contacts as at least one of opposing sides of the converter device and sharing a side of the converter device.

18. (Original) The apparatus as described in claim 14, wherein contacts having a function configured in the first configuration are not arranged with contacts having a corresponding function configured in the second configuration.

19. (Original) The apparatus as described in claim 14, wherein the converter device includes a first converter board and a second converter board.

20. (Currently Amended) The apparatus as described in claim 19, wherein the first converter board includes ~~the first set of contacts and the second converter board includes the second set of contacts, the first set of contacts being communicatively coupled to the second set of contacts utilizing an intermediate set of contacts, wherein the first set of contacts, the second set of contacts, and the intermediate set of contacts include solder balls.~~ the first and second sets of contacts and the second converter board includes the third and fourth sets of contacts, the first set of contacts being communicatively coupled to the second set of contacts through the first converter board, the second set of contacts positioned for contacting the third set of contacts, the third and fourth sets of contacts being communicatively coupled through the second converter board, wherein the second and fourth sets of contacts include solder balls.

21. (Currently Amended) The apparatus as described in claim 19, wherein the first converter board includes ~~the first set of contacts and the second converter board includes the second set of contacts, the first set of contacts being communicatively coupled to the second set of contacts through an intermediate set of contacts, wherein each of the first set of contacts, the second set of contacts, and the intermediate set of contacts includes contacts round in cross section.~~ the first and second sets of contacts and the second converter board includes the third and fourth sets of contacts, the first set of contacts being communicatively coupled to the second set of contacts through the first converter board, the second set of contacts positioned for contacting the third set of contacts, the third and fourth sets of contacts being communicatively coupled

through the second converter board, wherein the second and fourth sets of contacts include contacts round in cross section.

22. (Currently Amended) The apparatus as described in claim 19, wherein the first converter board includes ~~the first set of contacts and the second converter board includes the second set of contacts, the first set of contacts being communicatively coupled to the second set of contacts through an intermediate set of contacts, wherein each of the first set of contacts, the second set of contacts, and the intermediate set of contacts include spherical contacts.~~ the first and second sets of contacts and the second converter board includes the third and fourth sets of contacts, the first set of contacts being communicatively coupled to the second set of contacts through the first converter board, the second set of contacts positioned for contacting the third set of contacts, the third and fourth sets of contacts being communicatively coupled through the second converter board, wherein the second and fourth sets of contacts include spherical contacts.

23. (Currently Amended) An apparatus, comprising:

a ball grid array integrated circuit ~~have~~ having a first configuration of contacts;

a first round contact in physical and electrical contact with the ball grid array integrated circuit;

a first converter board in physical and electrical contact with the first round contact;

a second round contact in physical and electrical contact with the first converter board;

a second converter board in physical and electrical contact with the second round contact;

a third round contact in physical and electrical contact with the second converter board;

a third converter board in physical and electrical contact with the third round contact;

a fourth round contact in physical and electrical contact with the third converter board; and

a circuit board in physical and electrical contact with the fourth round contact, the circuit board having a second configuration of contacts not arranged with contacts having a corresponding function configured in the first configuration,

wherein the ball grid array integrated circuit and the circuit board sandwich the first, second, third, and fourth round contacts and the first, second, and third converter boards;

wherein the ball grid array integrated circuit is electrically and communicatively coupled through the first round contact, the first converter board, the second round contact, the second converter board, the third round contact, the third converter board, and the fourth round contact to the circuit board.

24. (Previously Presented) An apparatus, comprising:

an integrated circuit including a set of contacts, wherein the integrated circuit set of contacts is suitable for operation in a first configuration, the first configuration having an arrangement of contacts and corresponding functions of arranged integrated circuit contacts;

a circuit board including a set of contacts, wherein the circuit board set of contacts is suitable for operation in a second configuration, the second configuration having an arrangement of contacts and corresponding functions of arranged circuit board contacts, wherein the contacts of the second configuration are situated to correspond to the contact of the first configuration of the integrated circuit, and arrangement of functions of the contacts of the second configuration does not correspond to arrangement of functions of the contacts of the first configuration; and

a converter device disposed between the integrated circuit and the circuit board, wherein the converter device includes a first set of contacts suitable for contacting the integrated circuit having the first configuration and a second set of contacts suitable for contacting the circuit board having the second configuration, the first set of contacts electrically coupled to the second set of contacts via electrical connections, wherein contacts having a function configured in the first configuration are not arranged with contacts having a corresponding function configured in the second configuration, the converter device formed of having interior layers in physical contact in the following order: first dielectric, a ground plane, second dielectric, signal, third dielectric, power, fourth dielectric, ground, and fifth dielectric.

25. (Previously Presented) The apparatus of Claim 24, wherein the second and third dielectric layers are thicker than the first, fourth, and fifth dielectric layers.